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THESIS

AN ANALYTICAL MODEL FOR STUDYING THE RELATIONSHIPS BETWEEN NAVAL MEDICAL DEPARTMENT RESOURCES AND EFFECTIVENESS

by

THOMAS DAVID MCMAHAN

December 1984

Thesis Advisor: Thomas G. Swenson

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The management of Naval Medical Department resources takes place in a very complex environment. The Naval Medical Department has been given a dual mission of providing Beneficiary Health Care and being prepared for Contingency for War. Many would claim that these two roles are incompatible. Nonetheless the job of a manager is to transform the resources provided into the desired outcomes.

What this thesis purposes to do is build an analytical model

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An Analytical Model for Studying the Relationships Between Naval Medical Department Resources and Effectiveness

by

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Lieutenant, United States Navy
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Submitted in partial fulfillment of the
requirements for the degree of

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December 1984

ABSTRACT

The management of Naval Medical Department resources takes place in a very complex environment. The Naval Medical Department has been given a dual mission of providing Beneficiary Health Care and being prepared for Contingency for War. Many would claim that these two roles are incompatible. Nonetheless the job of a manager is to transform the resources provided into the desired outcomes.

What this thesis proposes to do is build an analytical model for studying the relationships between resources and outcomes. Once a manager is equipped to study these relationships, transforming the resources into the desired outcomes can be accomplished with more certainty than without this understanding. This model will provide direction and guidance in studying these relationships.

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GLOSSARY

ADPL- Average Daily Patient Load

UCA- Uniform Chart of Accounts

USM- Uniform Staffing Methodology

JCAH- Joint Commission on the Accreditation of Hospitals

IG- Inspector General (Medical)

UA- Unauthorized Absence

AWOL- Absent Without Leave

NJP- Non-judicial Punishment

LMET- Leadership and Management Effectiveness Training

I. INTRODUCTION

Managers of the Naval Medical Department and all of its facilities face a very difficult task. They are asked to act in the best interests of the Naval Medical Department and at the same time are expected to perform in the best interests of the facility they are assigned. This situation frequently creates a personal conflict for the manager. Assuming that the manager has some notion of what the Naval Medical Department wants or expects, the manager is still faced with the knowledge that performance is measured by the local commanding officer. This thesis will build an analytical framework in which managers may better understand: (1) their environment, (2) the resources available, (3) the types of outcomes that are measured, and (4) the process by which resources are transformed into outcomes. This theorectical structure is based on an input--process--output approach to the study of the relationships between resources and effectiveness. The model expressing this structure, which was introduced in a Manpower/Personnel Policy Analysis (MN4106) course at the Naval Postgraduate School, is important for the manager as the future success of any manager may well depend on the extent to which performance matches the expectations of the system [Ref. 1]. In this context the manager must have some way of determining the goals the system wants and how to best achieve those goals both utilizing the resources provided and applying the principles of management: (1) planning, (2) organizing, (3) staffing, (4) directing, and (5) controlling [Ref. 2].

A. ENVIRONMENT

The Navy Medical Department operates in a very complex environment. The understanding of that environment is essential to the effective management of the resources provided to the Medical Department for the accomplishment of its mission. An appreciation for and an understanding of the role or mission of the Navy Medical Department is also critical for the appropriate management of resources. Figure 1.1 [Ref. 3] shows how the various component parts of the Naval Medical Department form a complex structure that requires the balancing of the two

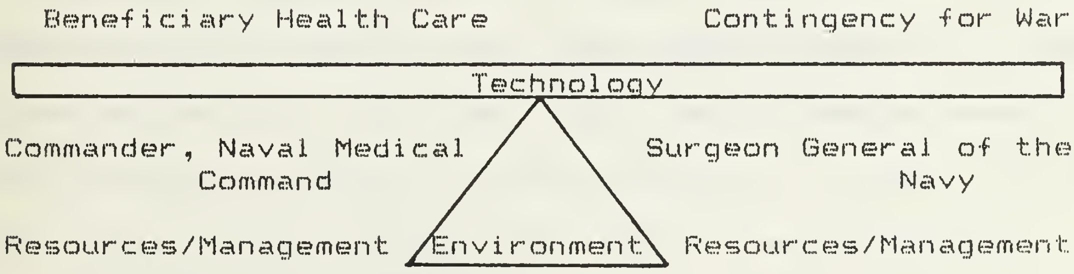

Figure 1.1 Structure

missions/roles. Generally, resources can be classified into four major categories: (1) Dollars, (2) Manpower (military, civilian, and contract services), (3) Material, and (4) Logistics. In an attempt to best utilize the resources provided, it is also necessary to understand how these resources relate to effectiveness within the dual roles or missions of the Navy Medical Department. This thesis will lay out the framework for the study of the relationship between resources, in particular manpower resources, and Navy Medical Department effectiveness. It needs to be made clear that although the resource that will be the focus of this thesis is manpower, it is but one of several resources about which a manager must be concerned. The untangling of this complexity requires the development of an analytical framework which would provide guidance and direction in the management of resources toward effectiveness.

The Navy Medical Department has at least two distinct roles or missions, that some might argue are incompatable or inconsistent. The first role is that of providing medical care in times of hostilities or Contingency for War. The other major recognized role is that of providing peacetime medical care or Benefciary Health Care. The integration of these two roles has been the focus of much discussion. The difficulty in balancing these two missions is in the measurement of how effective each of these roles is being accomplished. During peaceful times, how does one measure the effectiveness of the Navy Medical Department in preparing for the delivery of health care in a hostile situation? Conversely, how does one measure the effectiveness of the direct health care system during a time of hostilities and casualties? Another major problem that adds complexity to the resource management problem is how is the effectiveness of the Navy Medical Department measured not across missions but within a single mission or role? The problem here is how to measure how well the Naval Medical Department is accomplishing the Contingency for War mission? If both Naval Hospital San Diego and Naval Hospital Camp Pendleton have a Contingency for War mission, how can you measure the effectiveness (readiness) of each facility in accomplishing this mission? Do the same measures apply equally to both facilities? How much does the difference in the local environment affect the accomplishment of this mission and consequently the measurement of the effectiveness of each facility? These questions will be explored in some depth in this thesis.

B. STRUCTURE AND TECHNOLOGY

The mission of the Naval Medical Department is accomplished within a structure that has recently been changed. This change [Ref. 4] was mandated in an attempt to better align the structure and the mission of the Naval Medical Department. Under the new structure of the Naval Medical Department, the Contingency for War mission is the primary responsibility of the Navy Surgeon General and the Beneficiary Health Care mission is the primary responsibility of the Commander, Naval Medical Command [Ref.5]. Another dimension of effectiveness involves the multiple level structure in the Navy Medical Department. What might be effective for an echelon II command, such as the Naval Medical Command, may not be the same as effectiveness for an echelon III or IV command, such as a geographical command or a Naval Hospital respectively. Also, effectiveness may mean different things for units within the same echelon. What constitutes effectiveness at one Navy Hospital or Geographical Command may be quite different from effectiveness at another Navy Hospital or Geographical Command (i.e: Naval Hospital Bremerton, Wa. may have a different definition of acceptable access to services by all beneficiaries than does Naval Hospital Adak, Ak. because of a difference in the local environment surrounding each facility even though both facilities are in the same geographical region). Any study of manpower and its relationship to effectiveness must reflect a systems understanding of the inherent complexity outlined above.

Technology also affects each facility in a different manner [Ref. 6] . Because of variances in the breadth of services offered in our facilities different technologies are required. Not only may the type of services offered influence the type of technologies employed but so may the staff mix. The age of the staff can influence the demands they make on the organization for state-of-the-art technological equipment. The mix of the staff can also influence the amount of technology required to support them. Not only may the physician staff influence the amount of technology employed at any facility but so may the administrative staff and the nursing staff. Today the team approach to health care involves all levels of the staff in determining how much technology is enough. The pharmacist may be able to run the pharmacy with little more than shelves to store the stock and a counter to dispense from. Conversly, the pharmacist may require the state-of-the-art automated dispensing equipment to handle the required workload. Another determinant in the technological game is to what extent can technology substitute for labor and be price competitive (e.g. can automating the dispensing of medication in the pharmacy actually reduce the number of pharmacists or technicians and keep the per unit cost of medication the same?). These are questions that face decision makers when justifying the purchase of new technology equipment.

People influencing the amount and type of technology being employed has clearly been shown. However, technology also may drive the type of people employed. For example, when advanced technology is installed in the radiology department the technicians needed to be trained on the new equipment. This may mean additional training or the hiring of new personnel trained in the use of the new technology.

C. RESOURCES, PROCESS, AND EFFECTIVENESS

Somehow one must come to the realization that the management of constrained resources must be directed at the improvement of the system or unit effectiveness. How that is done is frequently the stumbling block to improved effectiveness. In order to improve effectiveness, one must understand the relationship of the resource in question to effectiveness and also how that resource relates to other resources and how they collectively impact on effectiveness [Ref. 7]. Simply being able to state that increasing the amount of one resource will improve a particular measure of effectiveness is not enough. To really manage resources effectively, one must be able to explain how the use of a resource brings about the improvement in effectiveness. That is quite a tall order. These relationships are almost always extremely complex and require a great deal of insight, intuition, and experience to fully understand how they interact to affect effectiveness. Any manager who wishes to materially improve upon effectiveness must, at some point in the managerial process, demonstrate an understanding of these relationships and the decisions made must reflect that a careful consideration of these relationships was made. Crane [Ref. 8] has stated that one sometimes finds counter-intuitive relationships. This generally happens when the analysis is not taken to a complete conclusion but rather when the expected results are found the analysis is stopped. Analysis must be complete to avoid counter-intuitive or at least to be able to understand the relationships that do exist when these relationships are counter-intuitive. It is helpful for the decision-making process to be undertaken within some logical analytical framework that has the necessary depth of understanding of the system complexity to provide guidance and direction in the understanding and management of organizational effectiveness.

D. AN EPIGRAMMATIC MODEL

It is the development of just such an analytical framework that will be the focus of this thesis. The development of this framework will necessitate the exploration of one specific resource category and its relationship to Navy Medical Department effectiveness and all of its component units. Other categories of resources also exist within the Naval Medical Department such as Materiel, Logistics, Budget, and Information. This framework also assumes that something is known about Navy Medical Department effectiveness. For any decision to be aimed at improving or optimizing effectiveness there must be some understanding about what effectiveness is and how it is measured. Because there are many ways of interpreting what one sees when scanning the environment there can be many ways of responding to the environment. Figure 1.2 is an epigrammatic framework in which managers can study and make decisions about how best to utilize resources in an attempt to optimize effectiveness. A full analytical model will be developed throughout this thesis and will be shown in the concluding chapter. In that context, the relationship of resources to effectiveness needs to be understood before decisions about them can be made. To aid in understanding those relationships, the manpower resource will be examined. Also the meaning of effectiveness or what constitutes effectiveness will be explored. All of this must, of course, be understood within the dual role or mission of the Navy Medical Department and other system complexities.

The analytical framework will include a look at: (1) the environment in which the Navy Medical Department operates, (2) the resources available to accomplish the

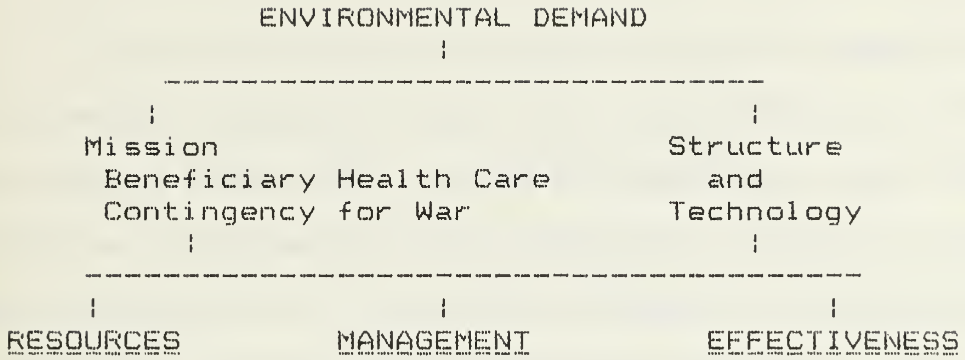

Figure 1.2 Epigrammatic Model

mission of the Navy Medical Department, (3) the measures of effectiveness, (4) and lastly, the management process. The final chapter will be a So What? look at the entire model. This chapter will attempt to bring together all of the model into a clear and concise statement of how all this works in the Naval Medical Department. Some specific examples of how resource utilization can influence the desired outcomes of a unit will be shown. The influence of planning, organizing, directing, staffing, and controlling as management processes will be demonstrated as being critical to explaining how resources affect the various measures of effectiveness.

II. ENVIRONMENT

A. POLITICAL

The environment in which the Navy Medical Department operates is extremely complex. This environment is political in that the health care system operates within the Department of Defense, which in turn must operate within the political processes of the federal government, both the Congress and the Administration. The extent to which any Navy Medical Department manager gets involved in this political scene depends upon where in the organization the particular manager is currently assigned. Quite obviously the higher in the organization the more significant will be the involvement in this environment. Being a manager in the Office of the Surgeon General or the Commander, Naval Medical Command places the management process in a very political environment. What this means for the manager is that the signals that must be paid attention to come not only from within the Naval Medical Department but also from outside the organization [Ref.9]. These external signals may come from the Navy leadership, the Department of Defense (generally from the Assistant Secretary of Defense for Health Affairs), the Administration, and the Congress.

The political environment also has an influence over the relative emphasis on the dual roles to be discussed in more detail later. This environment may thus influence the structure of the Naval Medical Department and the way it conducts business. This was evidenced recently by the directed reorganization. The leaders of the Navy and the Department of Defense were concerned that the attention to both missions of the Naval Medical Department had diminished and that a reorganization was the way to get the attention redirected to what these leaders felt to be a better focus on missions.

B. MILITARY

The very nature of the military environment makes demands on the Naval Medical Department. The complexity of the environment is evident by the dual mission or role statement given to the Navy Medical Department. The two roles are (1) Contingency for War and (2) Beneficiary Health Care. Figure 2.1 shows that the environment

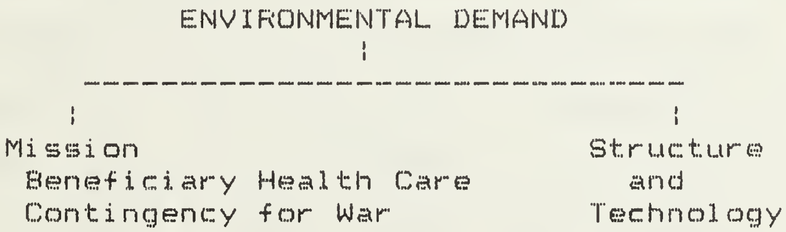

Figure 2.1 Epigrammatic Model of the Environment

creates demands upon the organization. In recent years the Navy Medical Department has been operating in a relatively non-hostile mode with much emphasis on the Beneficiary Health Care mission statement. This has led many leaders, including many top executives in the Navy Medical Department, to conclude that the Navy, and in general the military, is medically unprepared for any rapid escalation into a major conflict [Ref. 10]. This situation has led to the recent reorganization of the Navy Medical Department in an attempt to better structure the organization so as to be more responsive to this dual mission environment.

C. STRUCTURE AND TECHNOLOGY

The further removed one becomes from Washington, D.C., the more likely one is to become concerned with only one of the two missions. In between is where a significant conflict between the two roles is most clearly seen. The commanding officer of a fixed bed hospital is much more likely to be concerned with, and judged by, the day to day preformance of that facility. The commanding officer is given certain goals and budgets that are primarily concerned with the delivery of health care to the local beneficiary population. The commanding officer may also have a secondary mission of supplying certain physical and personnel assets to a Contingency for War mission. However, until such time as the requirement to provide these assets has arrived, these assets are employed in the delivery of direct health care. As such, the resources of a fixed bed hospital are generally employed in the Beneficiary Health Care mission to the exclusion of the Contingency for War mission. This situation exists because the environment in which the Navy Medical Department operates is obviously resource constrainted. The process of requesting funding necessary to support operations is briefly outlined in Figure 2.2 and Table 2.1 [Ref. 11 & 12]. The Naval Medical Department is a large organization with a very big budget. The process of putting together a budget request and then of allocating an approved budget is an enormous task given: (1) the number of facilities involved and (2) the dual missions to be considered in the budgeting process. Commanding officers and others in positions of authority must make judgments about what is important and what can be postponed when the resources provided are incapable of accomplishing everything that is desirable. By scanning the environment and attempting to read the positions of those in higher authority positions, commanding officers can reasonably be expected to respond to what they perceive as the priorities of those who stand in judgment of their performance. Much of that perception is influenced by how the commanding officer is evaluated. This is exactly why Steven Kerr [Ref. 13] has said that you get exactly what you reward. Another message, important to the executive leadership, is that you must reward that which you wish repeated.

The same process is used by officials in the policy making positions within the Office of the Surgeon General and also the Naval Medical Command. Decision makers at all levels perceive that someone sits in judgment of their performance. No matter at what level, the decision maker can reasonably be expected to respond to what is

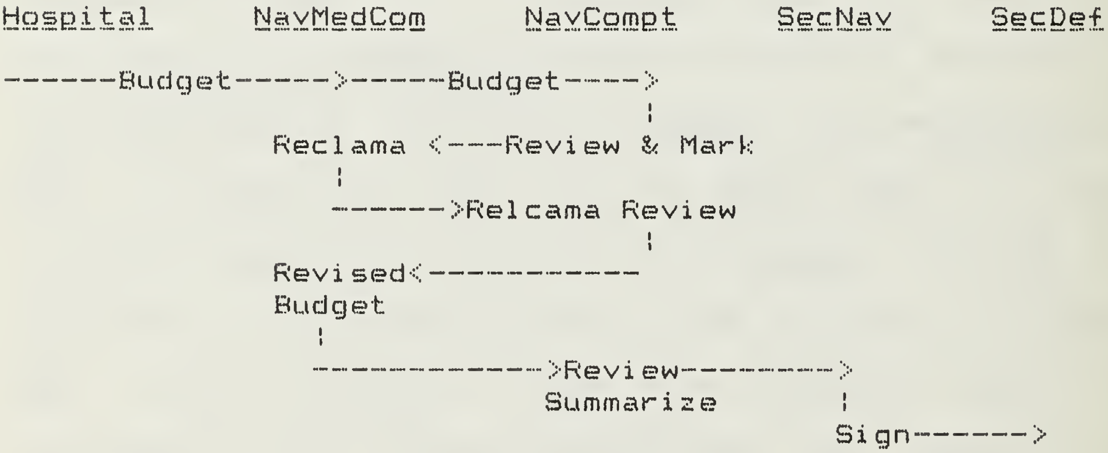

Figure 2.2 Department of the Navy Budget Process

viewed as the priorities of those who pass judgment. Those who would judge must therefore be very careful to ensure that the priorities that they set are the priorities that they wish acted upon. Here the folly is

TABLE 2.1

Congressional Budget Process

Approximate Deadline	Action
January 31	President submits his budget to Congress.
March 15	Congressional committees submit their "views and estimates" to the Budget Committees.
April 1	Congressional Budget Office submits its analysis of the president's budget proposal to the Budget Committee.
April 15	Budget Committees report first concurrent budget resolution to their respective houses.
May 15	Congress completes action on first concurrent resolution.
July 15	Office of Management and Budget (OMB) submits midyear review of the President's budget proposal.
September 12	Congress completes action on all appropriations bills.
September 15	Congress completes action on second concurrent resolution on the budget.
September 25	If needed, Congress completes action on any reconciliation measures.
October 1	Fiscal year begins.

to reward A and hope for B [Ref. 14]. This must be avoided. The extent to which the perception then fits reality is a test of the decision makers ability to correctly scan the environment and top level communication of goals/priorities and the reward for goal attainment.

III. RESOURCES

All people who make decisions influence the acquisition and use of resources. Decisions are made only when there is some discretion in the use of resources. In the Naval Medical Department the major categories of resources are the Budget ($), Manpower (military, civilian, and contract services), Materiel, Logistics, and Information. Figure 3.1 shows the relationship of resources to the environment and to the decisions being made about their useage. At some point in the chain of command all of these resources are subject to the management process of decision making. An analogy can be made to the treatment of a patient. When a patient seeks medical care, the patient enters an environment that places demands on the health care facility and the health care provider. The provider has many different resources

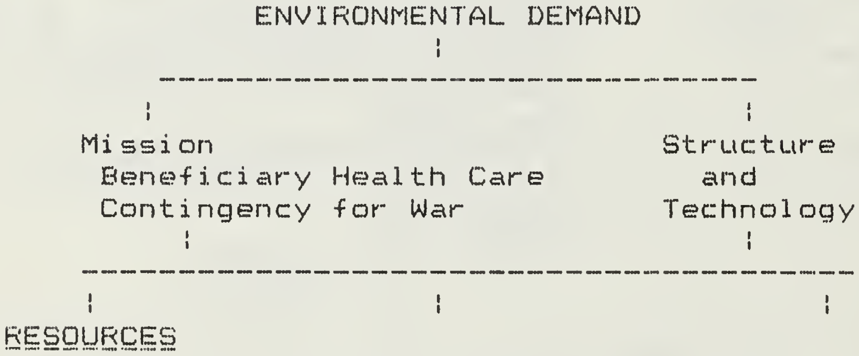

Figure 3.1 Epigrammatic Model of Resources

available in the form of x-ray, laboratory tests, surgical procedures, manpower, etc. The provider also knows that the measure of effectiveness is how fully the patient recovers and how rapidly that recovery takes place. Again, Steven Kerr would caution about rewarding one type of behavior while hoping for another. The management process or, in this case, treatment must be chosen so as to maximize the desired outcome. Maximization in this case would be a rapid recovery to full health. The physician is judged on the basis of how well the task was accomplished. Resource decisions influence the way in which they are acquired, allocated, used, saved, employed or otherwise consumed in the operations of the Naval Medical Department.

These resources must at some point in the political process be requested, authorized, and appropriated before they become available for use in the operations of the Naval Medical Department. The process by which the Naval Medical Department goes about determining the amount of each resource is a complex process. Generally, each commanding officer is responsible for submitting to the Naval Medical Department a budget request. This request would contain not only a monetary amount necessary to operate the command for one year but also any desired changes in the number of personnel needed to accomplish the mission as well as any changes in the mix of personnel types (such as military, civilian, or contract services) and any necessary improvements in the major materiel conditions, both plant and equipment, desired during that budget year [Ref. 15]. Each of these resource categories could result in a separate request, perhaps even submitted at different times during the budgeting cycle.

All commanding officers and their responsible staffs must carefully prepare the budget requests. They must determine what changes in mission, role, beneficiary size, or other considerations might influence the type and quantity of operations they will need to budget for in order to meet their commitments in the budget year. The environment in which they will be operating will be a large determining factor in the size of the budget request submitted to higher authority. As discussed in the preceding chapter, the priorities of the command in requesting its resources is determined by its perceptions of its operating environment, which is partially determined by higher authority and the messages its sends to its commanding officers. These messages do not refer exclusively to the traditional informational Naval messages but also to the indirect messages of what is important and what the higher authority would like to see emphasized in the current budget cycle.

The Department of the Navy, the Department of Defense, and the Administration each then has an opportunity to review and revise, if necessary, the budget request before it is send to the Congress. The Congress working through committees reviews each budget request and then formulates their own budget proposal for presentation to the full Congress. The budgeting process within the Senate and the House of Representatives is done in two phases. First all the Department of Defense programs are authorized. That means that the Congress gives the DoD permission to have the program. Then the Congress appropriates monies for the programs. This can result in programs being under-funded or on occasion over-funded. The authorizations process generally tends to be a pro-military forum in that most programs get supported in the authorization committees of both chambers of the Congress. The appropriation committees tend to be less pro-military. That is they are much more critical of defense spending and are less likely to approve funding for everything that the authorization committees approved. This creates an interesting situation for many members of Congress. They can appear to be the friends of the DoD by sitting on the authorization committees while at the same time they may know that because of the dual nature of the budgetary process the program may never see any funding. This allows members of the authorization committees to become very generous in approving defense programs while at the same time knowing that the final federal budget will not support all of the Defense programs [Ref. 16].

Once the Naval Medical Department has received its budget for the year, it is allocated further to each facility. However, prior to the initial allocation, the top officials must determine what split to make between the two missions and how that split is to appear in each facilities budget. Monies can be specifically earmarked for certain purposes by headquarters prior to any distribution and for which each commanding officer is then obligated to spend. Monies not so designated are then available to the individual commanding officer to spend in the best interest of the command as decided by that commanding officer and other staff members brought into the decision making process. Again, the commanding officer, in exercising command decision, must consider what resources have been provided, what the environment is in which the facility is operating, what the perceived priorities are of those who will judge the performance of the commanding officer, and how the various options will impact on the desired outcome. The significant assumption here is that commanding officers understand how the utilization of resources affect the effectiveness and they know what makes a facility effective.

The resources of Money, Manpower (military, civilian, and contract services), Materiel, and Logistics have been described as being available to a commanding officer in the operations of the facility. These resources are seen in Figure 3.2. The use of these resources is intended to permit a commanding officer or other manager to accomplish the goals and missions of the organization.

```
                    ENVIRONMENTAL DEMAND
                             |
              -------------------------------
              |                              |
           Mission                        Structure
            Beneficiary Health Care          and
            Contingency for War           Technology
                |                            |
           ---------------------------------------
           |                |                   |
       RESOURCES
        $
        Manpower
          Military
          Civilian
          Contract Services
        Materiel
        Logistics
```

Figure 3.2 Analytical Model of Resources

IV. EFFECTIVENESS

Naval Medical Department effectiveness has been the center of much discussion and research of late. Because of perceived ineffectiveness in accomplishing the missions of the Naval Medical Department, a recent reorganization was ordered by the Chief of Naval Operations [Ref 17]. The reorganization was directed at making the Naval Medical Department more responsive to the two mission requirements of the Navy and the Department of Defense. One of the major criticisms of the Naval Medical Department prior to the recent reorganization was that the Contingency for War mission had taken a back seat to the Beneficiary Health Care mission and that as a result our medical preparedness for war had suffered to the point that it was documented that we were totally unprepared for a major combat casualty scenario should it happen [Ref. 18].

To get the leaders of the Naval Medical Department to become more responsive to the Contingency for War mission, it was felt that the two missions needed to be split from one another at the highest level of the Naval Medical Department so that each had a major advocate at the top. To this end, the Beneficiary Health Care mission was made the primary responsibility of the Commander, Naval Medical

Command. The Contingency for War mission became the primary responsibility of the Surgeon General of the Navy. With this functional split in responsibilities at the top of the organization comes perhaps another area of confusion at the fixed bed hospital level. At the hospital level, each commanding officer may, and frequently does, have a dual-mission statement of providing Beneficiary Health Care and maintaining the military staff in a state of preparedness for war. Some facilities also have a responsibility of maintaining an inventory of medical material ready to be sent to a hostile situation at a moments notice. The responsiveness of each commanding officer to each of these missions is to some extent dependent upon the perceived importance of each mission as conveyed by the top management of the Naval Medical Department.

Another difficulty facing commanding officers in attempting to use their resources wisely is trying to understand how the use of resources affects the commands measures of effectiveness. Figure 4.1 shows how effectiveness is affected by the environment, the resources available, and the decisions made with regard to those resources. It may be possible that some commanding

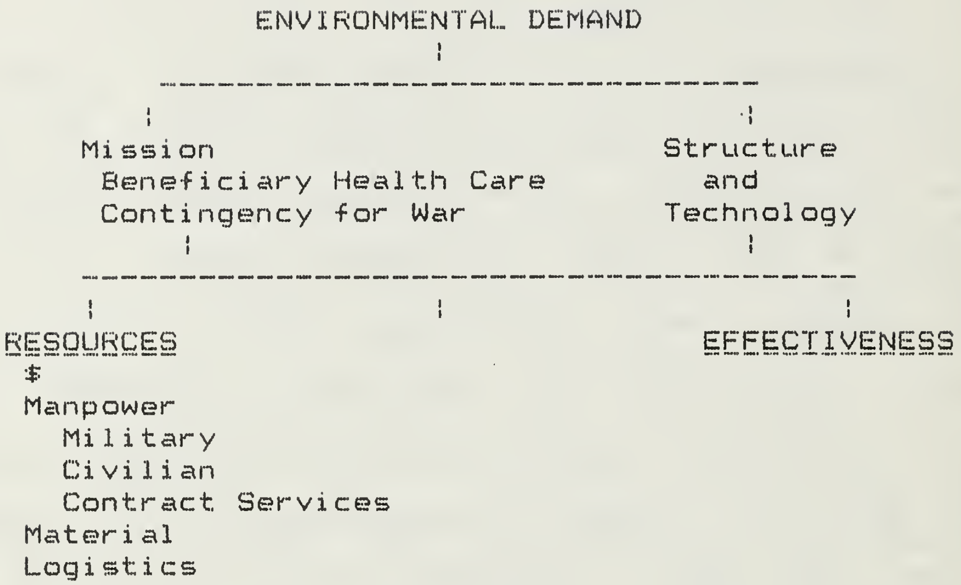

Figure 4.1 Epigrammatic Model of Effectiveness

officers do not even understand what constitutes effectiveness or what the measures of effectiveness are. Many of the measures of command effectiveness are very similar to those command characteristics identified by McBer and Company of Boston [Ref. 19]. These characteristics were identified during a study leading up to a Naval Medical Department Leadership and Management Effectiveness Training (LMET) program. McBer and Company developed the LMET program for the Navy line community and is now in the process of developing a program tailored to the needs of the Naval Medical Department. Many of these characteristics are not readily measureable but rather something intangible about a command that can be felt when studing, visiting, or otherwise observing a command. Table 4.1 lists the characteristics identified by McBer and Company. These characteristics were pulled together by McBer and Company using a Delphi technique along with conducting interviews and analyzing survey questionnaires.

There are many measures of command performance that are carefully monitored by the Naval Medical Department leadership. These measures include but are not limited to such things as meeting production goals, results of JCAH surveys, Medical IG inspections, Patient Satisfaction Survey results, letters of complaints, disciplinary problems such as UA, AWOL, and other NJP offenses, reenlistment rates, augmentation rates, requests for onboard extensions, requests for early transfers, inservice training programs and schedules, etc.. These measure are primarily concerned with the Beneficiary Health Care mission. Admiral Arentzen [Ref. 20] stated in an article that the measures of the Contingency for War mission are primarily through participation in Fleet Excerises as well as through training in methods of triage and care for mass casualties. Mobile Medical Augmentation Readiness Teams (MMART) are also having training packages developed for them. A comparison of Table 4.1 and those measures shown above, although different, reflect some important similar traits that should not be overlooked when attempting to understand what effectiveness is and how to best acheive it. Many of the characteristics identified by McBer and Company are the result of good management principles or when coupled with good management tactics result in behaviors that lead to the effective

TABLE 4.1

The 16 Most Necessary Performance Characteristics for the Job of a Navy Medical Department Commanding Officer[1]

1. Is loyal to Navy, hospital staff, and patients
2. Has a highly developed sense of morality (i.e., integrity and honesty)
3. Has a positive attitude toward his/her work
4. Possesses long-term (high) career goals
5. Is respected within his/her specialty
6. Conducts self in a military manner (i.e., is confident--self-assured)
7. Knows how to use informal contacts with people
8. Possesses excellent communication skills (speaking, writing, and listening)
9. Identifies strongly with the command
10. Is responsive to the needs of the command
11. Is caring and trusting
12. Is resourceful
13. Delegates responsibility
14. Has good interpersonal skills
15. Is knowledgeable about how the system works (i.e., fitness reports, civil service, finance, etc.)
16. Knows where he/she wants the command to go

---

[1] Source: McBer and Company, "Excellence in Navy Medical Department Leadership and Management", p.6 .

command. Figure 4.2 now shows those measures of effectiveness that are deemed important by the executive leadership of the Naval Medical Department today. Figure 4.2 also shows the resources available to a commanding officer in striving to become effective.

Measures of effectiveness are the stabilizing factor for most commanding officers. They provide the direction against which the efforts of a command can be monitored. Without these measures all effort seems somehow aimless. For this model to offer direction and quidance these measures are necessary to complete the analytical framework.

Thus far the overall environment has been examined and shown to have demands that bring about two missions and influence the structure and technology of the Naval Medical Department. This chapter has looked at measures of effectiveness. The preceeding chapter looked at the resources provided to commanding officers for the operation of their commands. The relationships between these resources and the measures of effectiveness are extremely complex. Resources can have independent, joint, and interactive effects on these measures. Some resources are substitutes for others while the use of others may

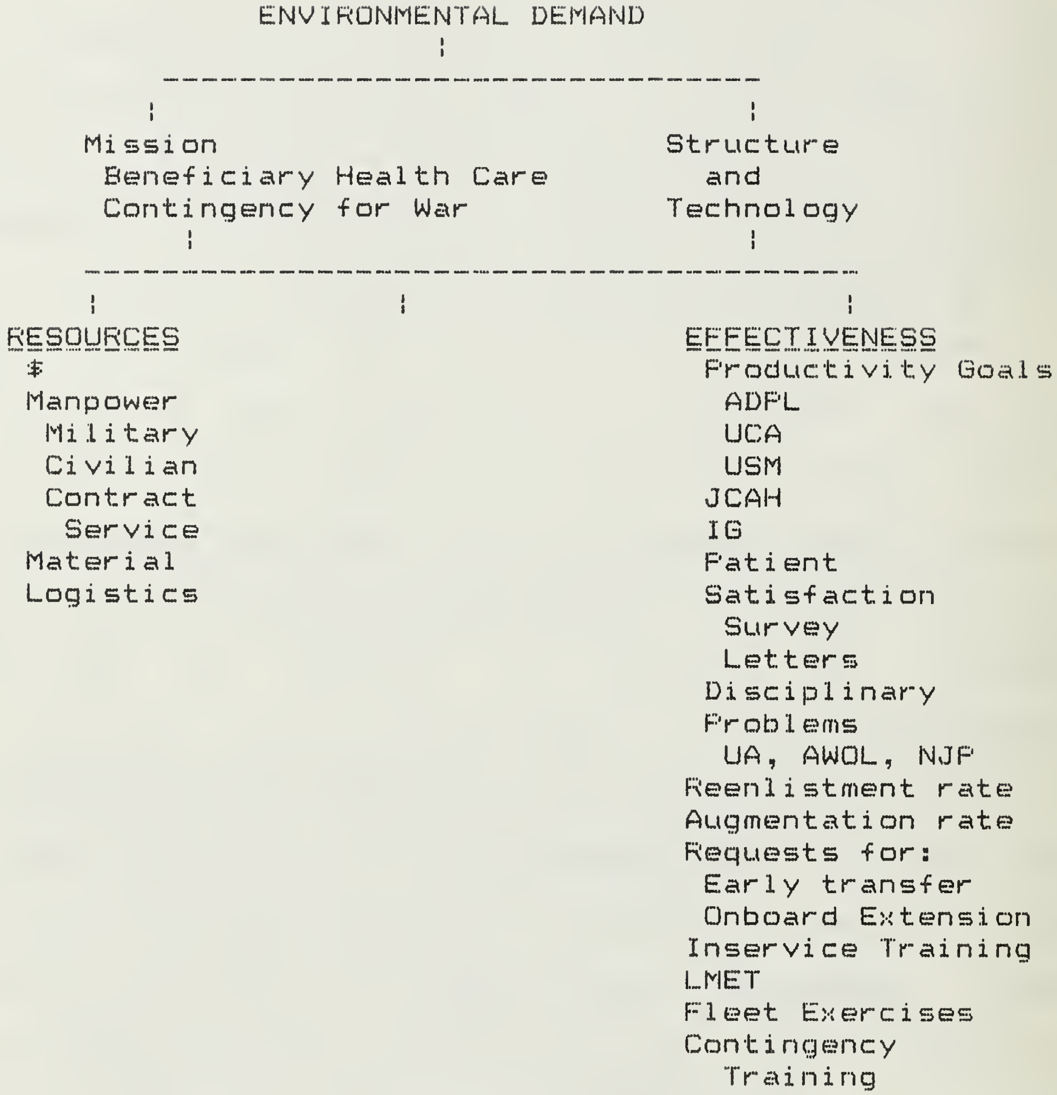

Figure 4.2 Analytical Model of Effectiveness

influence the way in which still others affect these measures. This framework gives the commanding officer a framework in which to better understand these relationships.

V. MANAGEMENT

Management decisions involving the use of resources take place in concert with the organization environment and the organization goals and desired outcomes. These relationships can be seen in Figure 5.1. The five areas of management process are 1) planning, 2) organizing, 3) staffing, 4) directing, and 5) controlling. Each of these critical areas of management involves the resources of an organization in some decision making problem aimed at the most effective utilization of those resources as measured by one or more of the measures of effectiveness. For example, a commanding officer facing a recurring problem of unsatisfactory patient complaints about the food arriving cold has many options to consider in deciding what to do. The commanding officer may: (1) order new food delivery equipment, (2) change the policy about the time between delivery of the food to the ward and delivery of the food to the patient, (3) Increase the number of personnel involved in the delivery of food to the patient, or (4) some other proposed solution. What is critical to the success of any decision is that the relationship between the resource and the desired outcome is known and understood [Ref. 21]. Without that understanding the chance of success is purely random. McBer and Company has found that commanding officers who possess the characteristics listed in Table 4.1 are more likely to have effective commands than those who do not. The characteristics listed in Table 4.1 were derived by McBer and Company using a Delphi Technique. Taking Table 4.1 one step farther, one could say that the commanding

```
                 ENVIRONMENTAL DEMAND
                          |
             ---------------------------------
             |                               |
         Mission                         Structure
          Beneficiary Health Care          and
          Contingency for War            Technology
               |                             |
         -------------------------------------------
         |                |                     |
     RESOURCES        MANAGEMENT           EFFECTIVENESS
      $                                     Productivity Goals
      Manpower                               ADPL
       Military                              UCA
       Civilian                              USM
       Contract                             JCAH
        Service                             IG
      Material                              Patient
      Logistics                             Satisfaction
                                             Survey
                                             Letters
                                            Disciplinary
                                            Problems
                                             UA, AWOL, NJP
                                           Reenlistment rate
                                           Augmentation rate
                                           Requests for:
                                            Early transfer
                                            Onboard Extension
                                           Inservice Training
                                           LMET
                                           Fleet Exercises
                                           Contingency
                                            Training
```

Figure 5.1 Epigrammatic Model of Management

officer who possess these characteristics is also likely to understand the relationship between resources and the desired effective outcomes of the management process.

A. PLANNING

In planning for the utilization of resources, one must be aware of what the desired end state of the facility is and how these resources affect the facility getting to that desired end state. As an example, in the planning for a new facility one must understand how the layout of the facility affects the reception of the clients and influences their perception of the facility based solely on the physical plant design. Without the understanding of how the physical plant affects the client, one would be hard pressed to work effectively with a design architect to produce an effective plant. Also, by designing solely on the basis of efficiency, one could overlook the importance of client satisfaction and thus have a highly efficient facility without having an effective facility as interpreted by the client user.

Planning could also involve the process by which commanding officers and others put together requests for future allocations of budget, manpower, material, logistics, and information. This future planning is apt to be more effective if those involved in the process have accurate information regarding future shifts in mission, population, or services expected to be offered. Once the future direction of the facility is known, the appropriate resources can be acquired and transformed into desired outcomes [Ref. 22]. Here again, sound management principles can easily mean the understanding and use of these relationships in planning for future budget requests.

B. ORGANIZING

The organization of any division, department, unit, or system should be aimed at allowing it to accomplish its mission in the most efficient and effective manner. To talk about vertical integration or horizontal integration, one must first have a clear understanding of the role or mission of the organization. One must also understand how the members of the organization can best be brought together accomplish that mission. In bringing together the resources of the organization, it is helpful to have some idea of how each contributes to the accomplishment of the mission. Without this understanding, the makeup of the organization might just as well be drawn up randomly. Clearly, the characteristics of the components of the organization partially determine what the organization should look like [Ref. 23].

The extent to which technology is employed also affects the structure of the organization. The greater the use of technology, the greater will be the departmentalization of an organization. This is necessary since with technology comes more skilled technicians, which requires similarly skilled supervisors and thus some type of departmental identity. The employment of technology also accompanies increasing size, complexity, and scope of services being provided in the facility. This also is accompanied by increasing complexity of structure within the unit.

C. STAFFING

In staffing a facility, the personnel characteristics will play a large part in developing a staffing plan. Another feature, that will play a major role in staffing a facility, is the degree to which different types of staffing mixes can contribute to the efficient accomplishment of the mission as measured by the measures of effectiveness and required by the structure, technology, and environment. It is generally accepted that physicians are independent providers of health care while nurses and, to a much larger extent, hospital corpsmen are dependent providers of care. With that understanding the amount of supervision provided in a staffing plan will depend entirely on what level of professional staff is being considered. Also, each type of staff member contributes to the measures of effectiveness in a different way. The type of contribution being made will also influence the staffing plan. In staffing, management frequently has some latitude in requesting and utilizing a mix of staff between military, civilian, and contract services. From a beneficiary health care mission, each may make a similar contribution. However, from a Contingency for War mission, only the military staff offers the flexibility to meet the potential mobilization requirements. The staff mix between military, civilian, and contract services is critical at most facilities. There exists, on most hospital staffs, some critical billets that must, for the sake of mobilization, be military. For example a hospital may have two surgeons on staff. They may also have a requirement to supply one surgeon for a mobilization team. In this senerio it would seem reasonable to assume that both surgeons must be military. From the system perspective these decisions must not only involve total numbers when considering how to staff the system but how these numbers are allocated through out the system. This single factor may play a significant role in developing a staffing plan not just at the unit level but more importantly at the system level [Ref.24].

D. DIRECTING

Directing can be thought of as similar to an orchestra conductor keeping all parts of the orchestra at the right place at the right time. The commanding officer or other manager has many assests, both personnel and material, that need to be coordinated in order to function appropriately. Once again, for this to be done correctly, the manager must have some ultimate goal or objective in mind that the utilization of these resources is aimed at accomplishing. The directing becomes easier if the personnel being directed understand what the ultimate objective of their efforts is expected to be. It is possible, however, to direct by blind obedience although success is much harder to come by and, frequently dependent upon one very rigid authoritarian, becomes questionable once that person is gone from the command.

Directing also involves the use of all resources toward some end goal in such a fashion that the end goal can reasonably be expected to come about. This assumes that the direction being given to the utilization of the resources has some relationship to the desired outcome [Ref. 25]. Here again, one sees that an understanding of the relationship between the resource and the desired outcome is paramount to the manager being able to provide the correct direction on behalf of the organization and also being able to communicate it staff members.

E. CONTROLLING

The art of controlling is being able, as a manager, to have sufficient information concerning the operations of the organization to ensure that the direction the organization is going is the direction that is desired. This is done by monitoring the measures of effectiveness as outlined in Figure 5.1 or others. To accomplish this without spending inordinate amounts of money on elaborate control systems, such as internal audits and checks and balances, is a critical element to the success of the operation. The commanding officer or manager must be able to access information about the organization and know from that information if the organization is accomplishing what it is intended to accomplish. Much has been written about management information systems (MIS) [Ref. 26 and 27]. The way in which these systems are structured has been descirbed as top-down or bottom-up which determines the type of information that is contained within the system. What is key to any information system is that the information available to management, as a result of having such a system, is capable of showing where the organization is headed, how it got there, what resources it used in getting there and what resources remain available to keep the organization moving [Ref. 28]. The manager must then determine from this information if the direction is appropriate and if the resources remaining are sufficient to get to the ultimate objective. These checks or controls on the organization must take place sufficiently often so that adjustments in the allocation of resources can take place before the assets of the organization are incapable of achieving the objectives. Management information systems are frequently thought of as computer based information systems. This is not necessarily true. Information systems can be in the form of pencil tabulated results of the Patient Satisfaction Survey done at all Naval Medical Facilities or it could be a computer based Uniform Chart of Accounts (UCA) report. What is important about a management information system is that it supply information critical to determining to direction of the organization and that management can make valid decisions using this information. Again, this direction is generally monitored by keeping abreast of the measures of effectiveness outlined in Figure 5.1. This figure attempts to show the measures that exist within the system at present and for which measures are available. It must be recognized, however, that not all characteristics of the unit or system are currently being measured. The result of this is that only limited caricatures of reality can result.

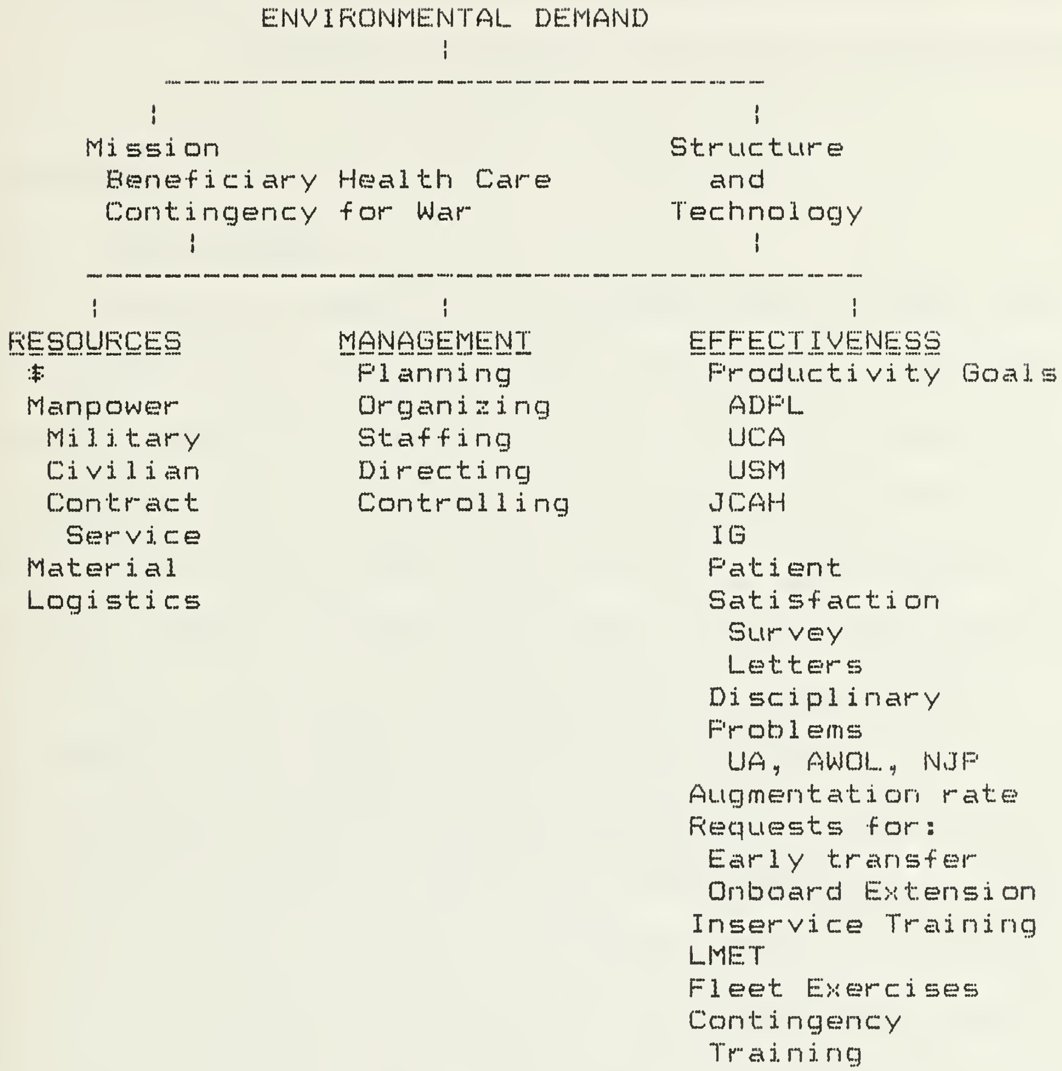

Figure 5.2 Analytical Model of Management

The management principles described above are designed to provide the commanding officer and other managers the tools with which to transform resources into desired outcomes in a efficient manner. Figure 5.2 now displays the completed analytical model. This model should provide managers with guidance and direction in the management of resources toward effectiveness.

VI. SO WHAT?

A. SUMMARY

1. Environment

Decision making in the Naval Medical Department takes place in a very complex environment involving political and other interacting elements. This complexity is compounded by a dual role or mission: (1) Beneficiary Health Care and (2) Contingency for War. Many members of the Naval Medical Department often view the two roles as incompatible and thus at odds when allocating resources. The demands that arise out of the environment also at least partially determine the structure and technology of the Medical Department and its subordinate units. The structure of the system has recently undergone a change that is aimed at making it more responsive to the priorities of the Navy, Department of Defense, and the Congress. This change basically assigned the Contingency for War mission to the Surgeon General and the Beneficiary Health Care mission to the Commander, Naval Medical Command. By decoupling these two roles, the Naval Medical Department can now give more directed and focused attention to each mission and attain a better balance of resource allocation between these missions. This split in responsibility will also allow more attention to be paid to the role of technology in the system. Because the Beneficiary Health Care mission is now the sole responsibility of the Commander, Naval Medical Command, requests for new or replacement equipment on the basis of upgrading technology in a facility can be given careful consideration. Any decision made can be made with a view toward maintaining a consistent technological policy within the unit and within the system. This is important since the degree of technology employed by any facility can influence the structure and organization of the unit. Technology can also significantly affect the allocation of highly skilled technicians.

2. Resources

The allocation of resources at the system level is based on the demands the environment places on each facility or unit. The use of those resources by the management of the facility is aimed at accomplishing the goals of the unit. What must be clearly understood by the managers is what goals they are attempting to accomplish. Anytime there is more than one way of accomplishing a goal, a decision must be made that determines which way will be used. Inherent in this decision is an understanding of how the various alternatives affect the desired outcome (e.g. managers must frequently decide whether to use military, civilian, or contract services personnel to accomplish a particular task). The decisions on what resources to commit to a particular task may have repercussions beyond the accomplishment of just that specific task. Manpower is a good example of the complexity of the resource procurement, allocation, and utilization problem. The Naval Medical Department managers may have the flexibility to procure the needed manpower from any one of three sources: military, civilian, or contract services. The final decision on the appropriate mix involves a very complex process. Many questions must be considered and answered in arriving at the final mix. A few of these questions are shown below:

1. Given the dual mission of the Naval Medical Department, what jobs are the exclusive domain of the active duty military forces?
2. What types of jobs are best suited for contracting out?
3. How does the use of civil service personnel affect the dual mission of the facility and the Naval Medical Department?
4. If a job could be done by any of the manpower resource types, what should be the determining factor?
5. To what extent does the cost of training versus hiring already trained personnel affect the decision to use a particular type of manpower?
6. To what extent can civilian and contract services personnel be utilized in fixed bed facilities to allow the military personnel to move into contingency roles?
7. To what extent can materiel substitute for manpower and how does the materiel logistics affect this substitution?

These are but a few of the many questions that must be answered prior to arriving at a decision affecting the mix of personnel assets to be requested from the Congress.

These decisions are all made with the goal of positively affecting the effectiveness of the system, unit, department, and division.

3. Effectiveness

Effectiveness may mean many things to many people. The extent to which effectiveness can be measured is frequently what determines what is called effectiveness. Figure 5.2 shows several of the measures of effectiveness that are being used by the leadership of the Naval Medical Department today. Some of these measures are traditional measures while others are relatively new and their usefulness is still being examined. The McBer and Company study found 16 characteristics of commanding officers that were common to all commanding officers of excellent hospitals. These characteristics can all be categorized in one or more of the management processes as discussed below.

The measures of effectiveness that are listed in Figure 5.2 were pulled together by LT James A. Norton MSC, USN [Ref. 29] in his thesis research. He used a Delphi technique, interviewing many of the executive leadership in the Washington, D.C., area. These leaders can monitor all facilities by reviewing the quantifiable measures such as the extent to which each facility meets the production goals set by the Naval Medical Command, the results of JCAH surveys and IG inspections, and the results of

Patient Satisfaction surveys. By making on-site inspections or visits, these leaders can get a feel for such things as staff morale, facility cleanliness, teamwork, and other intangible properties of these facilities. Together these measures give the executive leadership a feel for commands that are effective.

4. Management

The traditional management processes of planning, organizing, staffing, directing, and controlling are all functions that must take place in a medical facility if that facility hopes to move toward its goals with a sense of direction. McBer and Company found that what distinguishes excellent commands from all others is the extent to which the management of those commands understands the role that management plays in transforming resources into outcomes.

McBer and Company are currently doing a study for the Naval Medical Department aimed at developing a system wide Leadership and Management Effectiveness Training (LMET) program for the Naval Medical Department. They have already implemented a LMET program at OIS in Newport, RI, for medical personnel and also an LMET segment in the Perspective Commanding Officer Course (PCC). They are currently putting togeter the curriculum for a department head and division officer LMET course.

The commanding officer characteristics and the measures of effectiveness described above are all natural fallouts of an excellent management process. If a command does a good job of planning, organizing, staffing, directing, and controlling, then the measures of effectiveness will most likely be positive. The management processes are aimed at transforming the resources into the desired outputs or outcomes. Commands that do a good job of managing resources by applying sound management principles (as defined in chapter 5) have a much better chance of meeting their goals than do commands who either do not manage or do a very poor job. What separates good/excellent management from average or poor management is the extent to which the managers understand the relationship between the resources and the desired outcomes or goals of the organization

In an attempt to begin to understand these relationships, a manager must have a conceptual framework in which to begin to think about how resources are transformed into the desired outputs. Figure 1.2 graphically depicts that conceptual framework. Figure 5.2 develops that conceptual framework further into an analytical framework in which the outcomes and resources are known. The management processes are defined and what is left is to be able to use that model to transform the resources into the outcomes, outputs, goals, or measures of effectiveness. That ability in a manager is reached when the relationships between resources and outcomes is clearly understood. That level of understanding on the part of a manager generally comes about as the result of intuition, insight, and experience.

B. CONCLUSIONS

The Congress, the Administration, the Department of Defense (OSDHA), the third party payers, and the Navy are all pushing for increased effectiveness in the utilization of health resources. In the private sector this push would result in a slower rise in prices of health services. In the Navy, it would result in being able to accomplish more of the dual mission for the same amount of budget. The easiest way to accomplish this goal in the Navy is to become more effective managers of the resources provided. For managers to become more effective in the utilization of resources requires that they understand how the use of resources affects the desired outcomes for which resources are provided.

The first step in becoming a more effective Navy health care manager is to begin to understand how resources are transformed into either end product of the Naval Medical Department: (1) Beneficiary Health Care and (2) Contingency for War. This thesis has presented a conceptual and an analytical framework for managers to begin to understand these relationships. The use of this framework will allow managers to begin to think, in advance of making decisions, about what the desired outcome is supposed to be, what resources are available to accomplish that outcome, what alternatives these resources present, how the use of these resources affects other desired outcomes, and finally what management process can be applied to these resources to have the best opportunity to bring about the desired outcome. It is reasonable to assume that the more experienced a manager is in the use of health care resources the more adept the manager will be in the utilization of these resurces. It is also reasonable to assume that experience alone will not provide the desired utilization of the Naval Medical Department resources. Managers must have the ability to project what outcomes will likely result from the utilization to resources when these resources are subjected to sound management practices. Figure 5.2 provides a framework in which managers can understand how resources affect outcomes. With this understanding it is expected that managers will begin to utilize resources in a more efficient manner guiding them to produce the desired results with a much greater likelyhood of success than when there is little or no understanding of how these relationships work.

This framework has the ability to assist in overcoming the problem of avoiding counter-intuitive results of incomplete analysis. May [Ref. 30] found that when looking at personnel characteristics and readiness measures on a Navy ship the findings did not fit the intuitive answers. The problem was most likely due to an incomplete analysis and an incomplete understanding of the relationships of the resources and the measures of readiness.

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